Space Weather Forecast

Issued on Saturday, 05 November 2022 at 01:29 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Low risk of G1/Minor Storms early on 05 November.
Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low over through the last 24 hours, with one significant Common-class flare from an increasingly complex region which is rotating across the northeastern limb. There are four further less complex regions in this area of the sun. The two large regions in the northwestern quadrant have remained relatively stable, or are showing a slight decline. A single region in the southeast is weak and simple. No Earth-directed CMEs (coronal mass ejections) have been observed on available imagery.

Solar Wind / Geomagnetic Activity: The solar wind is showing ongoing but declining effects from a fast wind, with this still just at elevated levels. Total magnetic field strength has been weak throughout, with the north-south component also varying weakly. Geomagnetic activity was Active until 04/1200UTC but has been Unsettled since.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary
Solar Activity: Solar activity is forecast to be mainly Low, with a slight but increasing chance of Moderate activity due to developing regions on the visible disc. There is also a risk from potentially complex regions rotating onto the disc from the farside of the Sun.

Solar Wind / Geomagnetic Activity: No Earth directed CMEs are forecast. The current fast wind is expected to decline to background levels by the end of 06 November. A further fast wind may then connect with the Earth either later on 07 November or during 08 November, although there is low confidence in the strength of any connection. Geomagnetic activity is expected to be mainly Quiet to Unsettled but there is a slight chance of Active or G1/Minor Storm intervals early on 05 November and then a chance of Active intervals late on 07 or early on 08 November.

Energetic Particles / Solar Radiation: The count rate of energetic particles (High energy protons) is forecast to persist at background with no solar radiation storms occurring.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	1	10	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	15	15	15	15
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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